## (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

## (19) World Intellectual Property Organization International Bureau



# 

(43) International Publication Date 28 April 2005 (28.04.2005)

**PCT** 

## (10) International Publication Number WO 2005/038765 A1

(51) International Patent Classification7:

G09G 3/34

(21) International Application Number:

PCT/IB2004/052092

(22) International Filing Date: 14 October 2004 (14.10.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data: 60/511,691

16 October 2003 (16.10.2003) US

(71) Applicant (for all designated States except US): KONIN-KLIJKE PHILIPS ELECTRONICS, N.V. [NL/NL]; Groenewoudseweg 1, NL-5621 BA Eindhoven (NL).

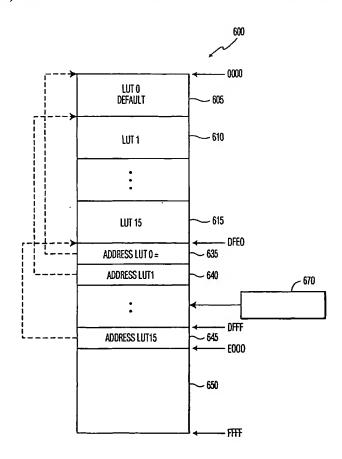
(71) Applicant (for AE only): U.S. PHILIPS CORPORA-TION [US/US]; 1251 Avenue of the Americas, New York, NY 10020 (US).

(72) Inventors; and

- (75) Inventors/Applicants (for US only): ZHOU, Guofu [NL/NL]; Groenewoudseweg 1, NL-5621 BA Eindhoven (NL). KAMER, Jan Van De [NL/NL]; Groenewoudseweg 1, NL-5621 BA Eindhoven (NL). JOHNSON, Mark, T. [GB/NL]; Groenewoudseweg 1, NL-5621 BA Eindhoven (NL). AILENEI, Neculai [NL/NL]; Groenewoudseweg 1, NL-5621 BA Eindhoven (NL).
- (74) Common Representative: KONINKLIJKE PHILIPS ELECTRONICS, N.V.; c/o KEEGAN, Frank, P.O. Box 3001, Briarcliff Manor, NY 10510-8001 (US).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,

[Continued on next page]

(54) Title: LOOK-UP TABLES WITH GRAYLEVEL TRANSITION WAVEFORMS FOR BI-STABLE DISPLAY



(57) Abstract: A method and system for controlling electrophoretic and other bi-stable displays (310). Coded data (605, 610, 615) for driving the display is stored in memory (320) for different pixel transitions and different temperatures. The coded data includes voltage level and timing information for the different pixel transitions. A portion (705, 710, 715, 720, 725, 730) of the coded data is retrieved by a controller (100) such as an ASIC based on a selected pixel transition, temperature, and update mode. The portion of the coded data, which may include fixed length frame instructions, is decoded to provide decoded data. The decoded data is used to provide voltage waveforms for driving the display.



TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

## Declarations under Rule 4.17:

— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA,

MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

 as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for all designations

#### Published:

with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.